Amendments to the Claims:

Kindly cancel and add the claims as indicated below.

Claims 1 to 45 (cancelled).

46. (Original) A method comprising the steps of:

a) functionalizing a plurality of solid-phase supports;

b) placing the plurality of supports in a three-dimensional (3D) array; and

c) performing parallel synthesis of a library of molecules in the 3D array of supports with 3D diversity.

47. (Original) The method of claim 46, wherein a step of attaching a R_1 group member to each support is performed before the step of placing the plurality of supports in the 3D array.

48. (Original) The method of claim 46, wherein the step of placing the plurality of supports comprises using a support transfer device.

49. (Original) The method of claim 46, additionally comprising the step of removing the plurality of supports from the 3D array with a support transfer device.

50. (Original) The method of claim 46, additionally comprising the step of cleaving molecules from selected supports.

51. (Original) The method of claim 47, wherein the supports in the 3D array are arranged in a plurality of planes stacked in a Z direction and wherein the step of placing the plurality of supports in the 3D array comprises assigning at least one unique R_1 group member to each plane.

52. (Original) The method of claim 48, wherein the support transfer device is selected from the group consisting essentially of:

a) a rack having a plurality of rods sized to be inserted through an aperture formed in each support and a mechanism to prevent the supports from coming off the rack;

b) a plurality of tubes connected at a first end of the tubes to a manifold, the tubes being adapted each to suction at a second end of the tube one support taken from each column of supports in the 3D array when a vacuum is applied to the manifold; and

c) a transfer device including:

i) a transfer block having a plurality of recesses, the recesses being sized to receive one or more support and being spaced to substantially align with a plurality of wells of the 3D array; and

ii) at least one gate slidably engaged with the transfer block, each gate having apertures formed therein, wherein sliding the gate into an open position allows one or more supports to pass through apertures in the gate and sliding the gate into a closed position withholds supports from passing through the gate.

53. (Original) The method of claim 49, wherein the support transfer device is selected from the group consisting essentially of:

a) a rack having a plurality of rods sized to be inserted through an aperture formed in each support and a mechanism to prevent the supports from coming off the rack;

b) a plurality of tubes connected at a first end of the tubes to a manifold, the tubes being adapted each to suction at a second end of the tube one support taken from each column of supports in the 3D array when a vacuum is applied to the manifold; and

c) a transfer device including:

i) a transfer block having a plurality of recesses, the recesses being sized to receive one or more support and being spaced to substantially align with a plurality of wells of the 3D array; and

ii) at least one gate slidably engaged with the transfer block, each gate having apertures formed therein, wherein sliding the gate into an open position allows one or more supports to pass through apertures in the gate and sliding the gate into a closed position withholds supports from passing through the gate.

54. (Original) The method of claim 49, wherein the step of removing the plurality of supports comprises removing one Z plane at a time.

55. (Original) The method of claim 51, wherein the least one unique R1 group member comprises one unique R1 group member.

56. (New) The method according to claim 46, wherein the solid-phase supports are fabricated using material selected from the group consisting of resin, glass, silica gel, alumina gel, cellulose, polyolefins, polypropylene, polyethylene, halogenated polyolefinds, polytetrafluororethylene, poly(chlorotrifluorethylene), polyamides, polyimides, poly(paraxylylenes), phenol-formaldehyde polymers, and other material that may be functionalized and is compatible for use in combinatorial chemistry.

57. (New) The method according to claim 46, wherein the supports are selected from the group consisting of rods, disks, tubes, rings, beads, sheets and spheres.

58. (New) The method according to claim 46, wherein the supports comprise a functionalized graft co-polymer of polypropylene, polyethylene, polytetrafluoroethylene, poly(chlorotrifluoroethylene) or polyolefin.

59. (New) The method according to claim 46, wherein the supports comprise a functionalized graft co-polymer of a halogenated polyolefin.

60. (New) The method according to claim 52, wherein the rack further comprises a mechanism to keep the supports immersed in liquid.

61. (New) The method according to claim 52, wherein the mechanism for preventing the removal of the supports from the rack comprises an end cap attached to one end of at least one rod.

62. (New) The method according to claim 60, wherein the mechanism to keep the supports immersed in liquid comprises an obstruction device that limits movement of the supports on the rods.

63. (New) The method according to claim 52, wherein the transfer block includes a vacuum orifice.

64. (New) The method according to claim 52, wherein the transfer block includes a top retaining wall.

65. (New) The method according to claim 52, wherein the transfer block includes an upper gate and a lower gate.